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van Buiten, M.; Keren, G.B.

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# Speakers' choice of frame in binary choice: Effects of recommendation mode and option attractiveness

Marc van Buiten\*

Eindhoven University of Technology

Gideon Keren

Tilburg University

## Abstract

A distinction is proposed between *recommending for* preferred choice options and *recommending against* non-preferred choice options. In binary choice, both recommendation modes are logically, though not psychologically, equivalent. We report empirical evidence showing that speakers recommending for preferred options predominantly select positive frames, which are less common when speakers recommend against non-preferred options. In addition, option attractiveness is shown to affect speakers' choice of frame, and adoption of recommendation mode. The results are interpreted in terms of three compatibility effects, (i) *recommendation mode—valence framing compatibility*: speakers' preference for positive framing is enhanced under *recommending for* and diminished under *recommending against* instructions, (ii) *option attractiveness—valence framing compatibility*: speakers' preference for positive framing is more pronounced for attractive than for unattractive options, and (iii) *recommendation mode—option attractiveness compatibility*: speakers are more likely to adopt a *recommending for* approach for attractive than for unattractive binary choice pairs.

Keywords: framing; positivity bias; recommendation mode; valence.

## 1 Introduction

Framing effects have been much debated ever since Tversky and Kahneman (1981) showed that preference for risk is dependent on choice alternatives being framed either in positive or negative terms. Evidently, choice behavior is determined not only by the inherent value of the alternative options, but also by the way in which they are described.

Early framing studies exposed participants to vignettes that contained text fragments and recorded decision makers' corresponding choices. Little attention was paid in these studies to the *source* of the message. In reality, however, a message is transferred from a source (e.g., a speaker) to a target (e.g., a listener). Indeed, an analysis of the speakers' and the listeners' perspective is central to the conversational analysis of human judgment (Schwarz, 1996) and constitutes the essence of Grice's logic of conversation and relevance theory. The social context of decision making is therefore crucial when studying framing.

An understanding of the pragmatics of framing requires not only the study of decision makers' responses

to alternative frames, but also an examination of speakers' construction and preference among various possible frames. The present paper constitutes a continuation of our previous research (Van Buiten & Keren, 2009) in which, employing a conversational framework, the persuasive efficacy of speakers and listeners was examined. Specifically, in previous research we analyzed risky choice framing (Levin, Schneider, & Gaeth, 1998), and have shown that speakers who try to persuade a listener to adopt a particular choice alternative possess a distinct preference for positive over negative framing. Judged from listeners' responses, however, the inclination to use positive frames is effective for promoting riskless, but not risky options. We demonstrated empirically that the incompatibility between speakers and listeners was due to an asymmetry in evaluation mode (Hsee, Loewenstein, Blount, & Bazerman, 1999) between speakers and listeners. Speakers can *jointly* (i.e., comparatively) assess the information and the persuasive qualities of alternative frames. In contrast, listeners are exposed only to one of these frames and, consequently, can assess the information only *separately* (i.e., non-comparatively).

In our earlier research we studied frame valence (positive vs. negative) preferences of speakers' and their effectiveness in persuading listeners. Specifically, we examined the compatibility between speakers and listeners in terms of frame preferences. In the present study we explore a closely related issue to valence framing,

\*We thank Linda Moxey, Yaacov Schul, and Karl Teigen for their helpful comments on an earlier draft of this article. Address: Marc van Buiten, Department of Technology Management, Eindhoven University of Technology, P.O. Box 513, 5600 MB Eindhoven, The Netherlands. Email: m.v.buiten@tue.nl. Gideon Keren, TIBER, Tilburg University, P.O. Box 90153 5000 LE Tilburg, The Netherlands. E-mail: g.keren@uvt.nl.

namely the manner by which an option is recommended. A distinction is proposed between two general persuasive orientations that *speakers* might adopt: “*recommending for preferred choice alternatives*” and “*recommending against non-preferred choice alternatives*.”<sup>1</sup> This distinction is referred to as recommendation mode. Broadly speaking, *recommending for* entail drawing attention to (and listing of) desired attributes thus forming a positive orientation. In contrast, *recommending against* requires attending to unwanted aspects thus forming a negative orientation. Note that in the present context, positive and negative orientations should be interpreted not just in absolute but also in relative terms. Thus, for example, saying that “item A is cheaper than item B” implies a (positive) recommendation for A. Similarly, “item B is more expensive than A” implies a (negative) recommendation against B.

### 1.1 Recommendation mode: Recommend for vs. recommend against

Our main interest is to examine the effect of recommendation mode on speakers' selection of frame, and how it affects the persuasive efficacy of speakers. For listeners (i.e., decision makers), a closely related distinction is between accepting preferred and rejecting non-preferred choice alternatives. Shafir (1993) studied the accept-reject distinction in binary choice. Specifically, choice sets were employed that contained “enriched options” characterized by some very positive and some very negative attribute values, and “impoverished options” which merely included moderately positive and negative attribute values. He found that, even when both options in enriched-impoverished pairs were approximately equally attractive, the enriched option was likely to be accepted as well as rejected more frequently than the impoverished option. Shafir proposed a compatibility explanation following which positive attribute values weigh more in accept mode, whereas negative attribute values receive more weight in reject mode. That is, the enriched option suggests a more persuasive rationale for both accepting as rejecting it, yielding non-complementary, super-additive “accept” and “reject” proportions. This view has been challenged in subsequent research. Moreover, related research has extended the accept-reject distinction to the more general processes of inclusion and exclusion of items. For example, Heller, Levin, and Goransson

(2002) have shown that producing a shortlist of choice alternatives by eliminating prospects from an initial set of possible prospects (rejection or exclusion) is psychologically distinct from generating the shortlist from scratch (acceptance or inclusion), yielding different outcomes in terms of the size and composition of the resulting choice set. In particular, the choice set is typically larger when a rejection strategy is used.<sup>2</sup>

Inspired by the above research, the present paper primarily focuses on the effect of recommendation mode on speakers' frame selection, in particular in binary choice. Admittedly, decision and recommendation mode are different in many ways. Specifically, recommendation occurs prior to decision and entails less commitment. Despite the differences, there are also important similarities. In particular, in binary choice, recommendation mode can be viewed as a natural complement of decision mode. Just as decision makers can be oriented either towards the preferred (in accept mode) or non-preferred (in reject mode) option, speakers' verbal expressions too can be either aimed at the preferred (in *recommend for* mode) or the non-preferred (in *recommend against* mode) option.

In choice situations with more than two choice options, the recommend or accept mode, from the speaker's and listener's view, respectively, may be considered superior in terms of their efficiency. It is more efficient to select or recommend a preferred option from a large set of choice options than it is to explicitly reject or recommend against all others. In binary choice, which is examined in the present paper, there is no apparent difference in efficiency, and recommendation modes (and, decision modes) are logically equivalent. Notwithstanding, *recommending for* a preferred choice alternative or *recommending against* a non-preferred one are orientations that, although logically equivalent, might not be so psychologically.

Recent framing research illustrates how slight changes in verbal expressions have different conversational implicatures and can thus contain different implicit recommendations. For example, Teigen and Brun (1999) have shown that different verbal expressions of uncertainty that are judged to reflect the same numerical probability, i.e., “some possibility” and “quite uncertain,” nonetheless affect the degree to which a target behavior appears to be

<sup>1</sup>Whereas “against” in “recommending against non-preferred choice alternatives” is crucial to its meaning, in everyday discourse one would probably drop “for” in “recommending for preferred choice alternatives”. There is thus an asymmetry in the English terminology. However, in other languages such as Norwegian, or Dutch (the language used in the experiments reported in this paper), the terminology is symmetrical. For example, the Dutch translations of “recommend for” and “recommend against” are “aanraden” and “afraden.”

<sup>2</sup>Yaniv, Schul, Raphaelli-Hirsch, and Maoz (2002) discussed a dual-criterion model that links the non-complementarity of inclusive and exclusive modes of thinking to a justification process. The inclusion mode induces a person to justify why an option eligible for inclusion should be admitted in the set. In contrast, the exclusion mode induces a person to justify why an option eligible for exclusion should be removed from the set. This may lead to non-complementarity, because “in the inclusive mode, the absence of clear justification may be sufficient for the decision not to include an option in the choice set, while in the exclusive mode, the mere absence of clear justification for including an option may *not* be sufficient to exclude it” (Yaniv et al., 2002, pp. 353–354).

recommended. For instance, when a treatment (T) for migraine headaches was presented as having some possibility to be helpful, it was thought to express an implicit recommendation of T and correspondingly induced a relatively high willingness to recommend T, whereas claiming it to be quite uncertain to be helpful led to a lower willingness to recommend T.

Recommendation mode was indirectly addressed in the second and third experiments of a recent paper on one-sided uncertainty intervals (Teigen, Halberg, & Foster-vold, 2007). They show that a price of a product expressed in lower limit terms (e.g., "these shoes cost more than X") is judged by listeners as a discouragement to buy, whereas expressed in upper limit terms (e.g., "these shoes cost less than Y") is perceived to be an encouragement to buy. Speakers, correspondingly, used a lower limit statement when asked to discourage, and an upper limit statement when asked to encourage.

The work of Teigen et al. (2007) centered on the listener's perspective. In contrast, the present paper systematically addresses speakers' frame selection employing logically equivalent positive and negative frames. In our previous work (Van Buiten & Keren, 2009) we have demonstrated a "positivity bias" in framing, namely the finding that, other things being equal, speakers generally prefer positive to negative frames.<sup>3</sup> Our goal here is to further examine how speakers' preference for the positive frame is related to recommendation mode, and option attractiveness.

Experiments 1 through 3 were designed to explore, under different conditions, which frames speakers consider to be most persuasive. Two determinants of speakers' frame selection were examined, namely the aforementioned recommendation mode, and option attractiveness. Option attractiveness was considered a natural and potentially important factor, because of the notion of compatibility effects that plays a large role in research on the accept-reject distinction (e.g., Shafir, 1993). By extension, it was deemed important also for the present research on the related recommendation mode distinction. Option attractiveness is considered both as a direct determinant of frame selection, and as an indirect influence through its effect on the adoption of recommendation mode, which in turns influences speakers' frame selection. The final experiment also includes listeners' evaluations to assess the extent to which speakers' frame selection is indeed effective.

Consistent with our earlier research, in which the persuasive goal was implemented in terms of *recommending for* the preferred option, Experiments 1 and 2 show that

speakers have an overall preference for positive framing (i.e., positivity bias), which is mitigated by the compatibility principle. Speakers employing a *recommending against* strategy are less likely to use positive framing because of incompatibility between the (negatively perceived) strategy and positive frames. Moreover, framing behavior is affected by option attractiveness, depending on whether choice options are highly attractive or unattractive. Positive frames are less likely to be employed when options are very unattractive. Experiment 3 demonstrates the effect of option attractiveness on the adoption of recommendation mode. While speakers predominantly adopt a *recommend for* strategy, fewer speakers adopt this strategy and instead are more likely to employ a *recommend against* strategy when options are unattractive than when options are attractive. Finally, Experiment 4 illustrates that speakers' recommendation mode can indeed affect their persuasive efficacy.

## 2 Experiment 1

Part of the appeal of positive frames seems to be derived from the opportunity that speakers usually have to compare it to the logically equivalent negative frame (joint evaluation mode). When speakers are provided with both framing possibilities, there seems to be a cultural predisposition towards positive formulations.

In the present experiment, speakers were placed in the default situation of joint evaluation. We predicted recommendation mode to affect frame selection through two, partly counteracting, principles. First, based on the previously identified positivity bias, we expected that, other things being equal, speakers would reveal a preference for positive framing. Second, based on the compatibility principle, we further hypothesized that the positive frame would lose some of its appeal when speakers are geared towards the negative recommendation mode, i.e., *recommending against* a non-preferred alternative. Consequently, speakers in both recommendation modes were predicted to frame positively, but the effect was expected to attenuate in the *recommend against* mode, due to incompatibility between frame and recommendation mode.

### 2.1 Method

**Participants:** One hundred thirty-five students from Radboud University of Nijmegen participated in the experiment. The experiment was part of a set of unrelated decision-making tasks that took about 25 minutes to complete. Participants received € 5 for their participation.

**Design and procedure:** Participants read a scenario about a friend who was looking for a used car. Specifically, this person considered two cars that differed in

<sup>3</sup>The so called positivity bias is prevalent in different contexts and in different guises. For instance, most marketing communication attempts to influence consumers by presenting positive features of the product (or brand) or link it with positive associations (Crowley & Hoyer, 1994).

terms of driving performance, and fuel consumption. These features were expressed on an 11-point scale ranging from -5 (very poor) to +5 (very good).

Approximately half the participants were then presented with a table displaying two relatively good (attractive) cars. Car A scored +3 on driving performance and +1 on fuel consumption. Scores were reversed for car B, i.e., this car scored +1 on driving performance, and +3 on fuel consumption. Additional information accompanying the table pointed out that, due to the friend's limited budget, the cars were not brand new, but did not have serious defects because the scores on driving performance and fuel consumption were positive for both cars.

The other half of the participants received a table displaying two relatively poor (unattractive) cars. Car A scored -1 on driving performance and -3 on fuel consumption. Scores were reversed for car B, i.e., this car scored -3 on driving performance, and -1 on fuel consumption. Additional information accompanying the table pointed out that, due to the friend's limited budget, the cars were not brand new, and had some minor defects because the scores on driving performance and fuel consumption were negative for both cars.

All participants were instructed to imagine having a strong preference for car A, thus wanting to convince their friend of this car's superiority. They were assigned the role of speaker by imposing one of two recommendation modes. Participants in the *recommend for* condition were required to recommend car A as strong as possible. They were presented with two statements, one containing a positive and one containing a negative formulation, and had to indicate which they would use (i.e., which statement they thought was most persuasive):

"I recommend choosing car A. After all, car A is better than car B on driving performance" (*positive frame*), or

"I recommend choosing car A. After all, car B is worse than car A on driving performance" (*negative frame*)

Participants in the *recommend against* condition were required to recommend against car B as strong as possible. They also had to indicate which statement they would use (i.e., which statement they deemed most persuasive):

"I recommend against choosing car B. After all, car A is better than car B on driving performance" (*positive frame*), or

"I recommend against choosing car B. After all, car B is worse than car A on driving performance" (*negative frame*)

In sum, the experiment constituted a 2 (*recommend for* vs. *recommend against* mode) x 2 (attractive vs. unattractive options) between-subjects design. The dependent variable was the selection of frame (positive vs. negative). The order in which frames were presented on the screen was counterbalanced. No order effects were found.

## 2.2 Results and discussion

The results are portrayed in Table 1 (panel A). Consistent with our hypothesis, the majority of the participants (89 out of 135, or 66%) chose the positive frame ( $p < .001$  as judged by a binomial test). More important, as revealed by a logistic regression analysis, the tendency to frame positively was strongest with *recommend for* instructions (53 out of 69, or 77%), and was reliably reduced ( $\exp(B) = .20$ ,  $SE = .57$ ,  $p < .01$ ) for *recommend against* instructions (36 out of 66, or 55%).

The attractiveness of the cars did not reliably affect framing behavior ( $\exp(B) = .61$ ,  $SE = .50$ ,  $p = .32$ ), nor did attractiveness reliably interact with recommendation mode ( $\exp(B) = 3.10$ ,  $SE = .77$ ,  $p = .15$ ). Speakers were thus not more inclined to use positive frames for the more attractive options, nor were their responses greatly divergent in the *recommend for*-attractive cars and the *recommend against*-unattractive cars conditions relative to the other conditions. The present experiment, however, employed a scenario with choice options (common consumer goods) that were either mildly attractive or unattractive.

A follow-up experiment was designed to explore boundary conditions, using scenarios with choice options that were more extremely attractive or unattractive. The extremely attractive options were incidental lottery winnings in which participation in the lottery occurred by default as part of a signing up package for an online book club. These options were supposed to yield virtually costless gains. In particular, participants in the attractive options condition were told that a person named Peter had won a lottery. Peter, supposedly, had entered the lottery as part of his subscription to an online book club. His prize consisted of a stay in a hotel of his choice nearby a nature reserve. He had the choice between a two night stay in a 5 star accommodation (Prize X) and a four night stay in a 3 star accommodation (Prize Y). About half of the participants were instructed to persuasively recommend the two night stay in the 5 star accommodation (i.e., Prize X) through the selection of either a positive ("I recommend choosing Prize X. After all, with Prize X you gain a stay in a hotel of higher quality than is the case with Prize Y.") or a negative ("I recommend choosing Prize X. After all, with Prize Y you only gain a stay in a hotel of lower quality than is the case with Prize X.") frame. The other half of the participants in the attractive

Table 1: Proportions of participants in Experiment 1 preferring the positive frame as a function of recommendation mode and attractiveness.

## Panel A: Experiment 1

Recommendation mode	Option attractiveness		Total
	Attractive cars	Unattractive cars	
Recommend for	28/34 (82%)	25/35 (71%)	53/69 (77%)
Recommend against	16/33 (48%)	20/33 (61%)	36/66 (55%)
Total	44/67 (66%)	45/68 (66%)	89/135 (66%)

## Panel B: Follow-up experiment

Recommendation mode	Option attractiveness		Total
	Extremely attractive options (lottery scenario)	Extremely unattractive options (fine scenario)	
Recommend for	26/31 (84%)	18/31 (58%)	44/62 (71%)
Recommend against	26/30 (87%)	7/31 (23%)	33/61 (54%)
Total	52/61 (85%)	25/62 (40%)	77/123 (63%)

options condition were instructed to recommend against the four night stay in the 3 star accommodation (i.e., Prize Y), also by selecting the frame perceived to be most persuasive, i.e., a positive ("I recommend against choosing Prize Y. After all, with Prize X you gain a stay in a hotel of higher quality than is the case with Prize Y.") or a negative ("I recommend against choosing Prize Y. After all, with Prize Y you only gain a stay in a hotel of lower quality than is the case with Prize X.") frame.

The extremely unattractive options were unjustified fines. They were unjustified in that someone else committed a traffic violation for which an innocent person was being punished. These options thus yield a loss without any benefit. In particular, participants in the unattractive options condition were told that Peter was fined for a traffic violation which he did not commit. He was fined for recklessly ignoring a traffic light, thereby endangering the lives of others. Peter's many protests turned out to be fruitless, and he was given the choice between a suspended sentence of 1 day in prison plus a 32 hour course in appropriate driving (Fine X), and a suspended sentence of 2 days in prison plus a 4 hour course in appropriate driving (Fine Y). As with the attractive options, half of the participants were instructed to persuasively *recommend for*, while the remaining participant were instructed to *recommend against*, using positive and negative frames that were constructed in the same way as they were for the attractive options.

It was predicted that, compared with the previous ex-

periment, frame selection would become more unequivocal positive for extremely attractive options, and similarly predominantly negative for extremely unattractive options. The effect of the intrinsic (positive or negative) character of the choice options on frame selection was thought to partly offset the moderating effect of recommendation mode. This should render the positive frame especially suited for the promotion of extremely attractive options, and the negative frame for the promotion of the extremely unattractive options.

The results are depicted in Table 1 (panel B). Consistent with the original experiment, the overall tendency to frame positively (63%) was strongest with *recommend for* instructions (44 out of 62, or 71%), and was reliably reduced ( $\exp(B) = .21$ ,  $SE = .56$ ,  $p < .01$ ) for *recommend against* instructions (33 out of 61, or 54%).

Further, as predicted, the extremely attractive options scenario elicited a higher selection rate of the positive frame than the extremely unattractive options scenario (52 out of 61, or 85% vs. 25 out of 62, or 40%;  $\exp(B) = 3.76$ ,  $SE = .61$ ,  $p < .05$ ). Given the very negative nature of the unattractive options (i.e., jail time), the 40% selection rate of the positive frame can be considered fairly high, which further illustrates the potency of the positivity bias in framing.

In addition, option attractiveness asymmetrically affected framing behavior under *recommend for* and *recommend against* instructions. For extremely attractive options, participants overwhelmingly selected the pos-

itive frame independent of persuasive orientation (84% and 87% for *recommend for* and *recommend against* instructions, respectively).<sup>4</sup> For extremely unattractive options, a minority selected a positive frame under *recommend against* instructions (23%), but a small majority still selected the positive frame under *recommend for* instructions (58%). The interaction was statistically reliable ( $\exp(B) = 5.93$ ,  $SE = .92$ ,  $p < .05$ ).

One important finding emerging from the above experiments is that speakers with a *recommend for* orientation exhibit a strong tendency to use positive frames in persuasion attempts. This tendency was attenuated for speakers with a *recommend against* orientation. One might wonder whether or not this finding is specific to the kind of frames used in both experiments. These frames expressed attribute information of two options comparatively, either as a relative advantage of one (i.e., "A is better than B"), or as a relative disadvantage of the other option (i.e., "B is worse than A"). Attribute information was selectively displayed, i.e., the frames contained information about only one attribute, although more information was available in the scenario. In particular, two attributes were provided such that neither one of the two options dominated on both attributes.

Moreover, the different frames emphasized different options. Option A was the focal option in the positive frame ("A is better than B"), whereas option B was the focal option in the negative frame ("B is worse than A"). "Recommending A" is thus linguistically more compatible with "A is better than B" (i.e., "I recommend A, because A is better than B"), whereas "recommending against B" matches well with "B is worse than A" (i.e., "I recommend against B, because B is worse than A"). Would people still select a positive frame if all the information would be framed such that there is no clear emphasis on one of the options?

The results from a pilot experiment suggest that they would. As part of the experiment, participants were asked to select a frame that would most informatively explain a decision they made in the accept mode. The frames were structured as "Although option B has an advantage on attribute 1, option A has an advantage on attribute 2," or "Although option A has a disadvantage on attribute 1, option B has a disadvantage on attribute 2." These frames thus displayed information on both attributes either uniformly positive or uniformly negative. Across two contexts (i.e., rooms and music players), 84% of the participants selected the uniformly positive frame.

Because the above pilot experiment pertained to decision makers trying to explain their decision, and not to speakers engaged in persuading decision makers, the results may not directly apply. The following experiment

was designed to eliminate specific option emphasis by using positive and negative frames that do not contrast the two options in a way that one is focal. Further, it aimed to generalize our findings across yet another context.

### 3 Experiment 2

McNeil, Pauker, Sox & Tversky (1982) studied decision-makers' responses to information about two alternative treatments to lung cancer (surgery or radiation therapy). The information was presented in either a positive (survival rates), or a negative (mortality rates) frame. Their results showed that a large majority of decision makers (82%) preferred surgery to radiation therapy when the information was cast in a positive frame. This proportion was reduced when the information was formulated negatively (56%). Apparently, surgery dominated radiation therapy less when the immediate consequences were stated as an increased risk from 0% to 10%, rather than as a decreased survival rate from 100% to 90% (Tversky & Kahneman, 1986).

These findings suggest that speakers aiming to promote surgery would be more successful by adopting a positive format. Although radiation therapy is not very appealing under either of the frames, speakers promoting radiation therapy would still fare better by using a negative frame. As recommendation mode affects speakers' choice of frame, speakers operating under different recommendation modes should have different success-rates in persuading listeners.

Unlike in McNeil et al. (1982), participants in the present experiment were placed in the speakers' role. They were exposed to a modified version of McNeil et al.'s frames. Most importantly, the structure of the risky choice frames was retained, but the context was altered. The context dealt with the success (or failure) of business start-ups.<sup>5</sup> Further, slight changes were made to the specific numerical information presented in the frames in an attempt to equalize the attractiveness of the choice options.

#### 3.1 Method

**Participants:** One hundred forty-four students from Tilburg University participated in the experiment. The experiment was part of a set of unrelated decision-making tasks that took about 15 minutes to complete. Participants received € 4 for their participation.

**Design and procedure:** Participants were told that the Social and Economic Council of the Netherlands (or SER

<sup>4</sup>Note that the overwhelming choice of the positive frame when extremely attractive options are involved, may reflect a ceiling effect.

<sup>5</sup>This change was made in anticipation of the possibility that some participants might be uncomfortable trying to persuade someone to choose one medical treatment over another.

Table 2: Proportions of participants in Experiment 2 preferring the positive frame as a function of recommendation mode and the proposal being promoted.

Recommendation mode	Promoted proposal		Total
	Proposal A	Proposal B	
Recommend for	31/35 (89%)	28/37 (76%)	59/72 (82%)
Recommend against	12/37 (32%)	9/35 (26%)	21/72 (29%)
Total	43/72 (60%)	37/72 (51%)	80/144 (56%)

which is the Dutch acronym) advises the government about the outlines of social and economic policy. They were further told that one of the many goals of the government is stimulating economic activity, and, according to many, the role of small and medium enterprises is thought to be of utmost importance. Participants had to imagine that the government had to choose between two alternative policy proposals that were designed to increase economic activity. Both proposals had drawbacks and risks. There had been some experience with both policies abroad. The consequences of both proposals could be formulated in two distinct, yet logically equivalent, ways:

*Formulation 1:*

Under proposal A: Of 100 start-ups, 90 will survive the first few months,

68 will survive the entire first year and 30 will survive the first five years.

Under proposal B: Of 100 start-ups, all 100 will survive the first few months,

77 will survive the entire first year and 25 will survive the first five years.

*Formulation 2:*

Under proposal A: Of 100 start-ups, 10 will have failed in the first few months, 32 will have failed by the end of the first year and 70 will have failed by the end of the first five years.

Under proposal B: Of 100 start-ups, none will have failed in the first few months, 23 will have failed by the end of the first year and 75 will have failed by the end of the first five years.

Approximately half the participants were instructed to assume that the SER had a strong preference for proposal A. The remainder were instructed to assume that the SER had a preference for proposal B. Participants were then told either that the SER wanted, as strong as possible, to *recommend for* the proposal, or *recommend against* the alternative proposal. They were asked which formulation the SER should select in order to be most persuasive.

The experiment thus consisted of a 2 (*recommend for* vs. *recommend against* mode) x 2 (proposal A vs. B) between-subjects design. The dependent variable was the selection of frame. The order in which frames were presented on the screen was counterbalanced. No order effects were found.

### 3.2 Results and discussion

The results are presented in Table 2. The moderate overall tendency to frame positively (80 out of 144 or 56%), was substantially enhanced when instructed to *recommend for* a proposal (59 out of 72 or 82%), which reversed when participants were instructed to *recommend against* the alternative proposal (21 out of 72 or 29%). The difference was statistically reliable ( $\exp(B) = .11$ ,  $SE = .54$ ,  $p < .001$ ). These results suggest that the findings obtained in the previous experiment are not merely an artifact of option emphasis. That is, our results are not confined to frames that have an in-build emphasis on the one option in *recommend for* mode and positive frames, and an emphasis on the alternative option in *recommend against* mode and negative frames. Instead, our results extend to frames used here that lack any specific option emphasis.

Which proposal was promoted did not reliably affect framing behavior ( $\exp(B) = 2.49$ ,  $SE = .66$ ,  $p = .16$ ), nor did proposal reliably interact with recommendation mode ( $\exp(B) = .56$ ,  $SE = .84$ ,  $p = .48$ ).

Together, Experiments 1 and 2 established a clear link between recommendation mode and valence of frame (positive vs. negative). The results can be viewed as reflecting the combined effects of the positivity bias and compatibility. Accordingly, speakers have an overall tendency to frame positively. However, due to the compatibility principle, this tendency is reduced and sometimes reversed, when speakers are in *recommend against* mode which is more compatible with a negative formulation. In addition, option attractiveness affected framing behavior of speakers, but only when the attractiveness was highly transparent. In particular, information about inherently



attractive options tended to be framed positively, independent of recommendation mode. Framing was less positive when options were inherently negative, especially when speakers were in *recommend against* mode.

Experiments 1 and 2 have shown that speakers' frame selection is dependent on recommendation mode, option attractiveness, and possibly other factors. This dependency might lead speakers astray in persuasive communication. It seems that speakers are not very sensitive to the difference between their own perspective and that of the potential listener. For example, when listeners are best persuaded by the use of negative frames, speakers may nonetheless fail to employ negative frames when in a positive recommendation mode (i.e., *recommend for* mode).

## 4 Experiment 3

There are several ways by which option attractiveness might affect speakers' frame selection. In the present experiment, option attractiveness was examined as a possible determinant of recommendation mode, thereby indirectly affecting frame selection. The adoption of recommendation mode was predicted to be dependent on the compatibility of recommendation mode valence with option valence. Specifically, relative attractive—positive—choice options should induce most speakers to adopt a *recommend for* orientation (positive valence), whereas this tendency should be reduced, or even reversed, for relatively unattractive—negative—choice options (i.e., more people would adopt a *recommending against* orientation). In turn, a *recommend for* orientation would induce more positive framing compared to a *recommend against* orientation.

### 4.1 Method

**Participants:** One hundred forty-eight students from Fontys University of Professional Education in Eindhoven participated in the experiment. The experiment was part of a set of unrelated decision-making tasks that took about 20 minutes to complete. Participants received € 4 for their participation.

**Design and procedure:** Participants were exposed to the modified version of the scenario used in Experiment 2. As in Experiment 2, participants had to imagine that the government had to choose between two alternative policy proposals aimed at increasing economic activity. Approximately half the participants were told that the investment budget was larger than expected and that consequently, the government had the opportunity to choose between two very attractive alternatives. The remainder of the participants was told that the investment budget was smaller than expected and that, consequently, the

government had to choose between two very unattractive alternatives. Note that option attractiveness is an abstract variable. Options were described as either improvements (attractive), or deteriorations (unattractive) relative to the initial situation (depending on the investment budget) without being explicit about each of the options details. Specifically, participants were told the following:

Suppose that the investment budget to stimulate economic activity is larger [smaller] than expected. As a consequence extra investments can [cutbacks must] be made. The government has to choose between two very attractive [unattractive] alternatives. The SER has its own opinions about the two proposals and wants to express its views to the government as convincingly as possible. There are of course many ways by which to accomplish this. One of which is to choose an appropriate formulation.

Participants were then asked which strategy could be utilized most persuasively by the SER: *recommending for* the proposal the SER likes most, or *recommending against* the proposal the SER dislikes most (question 1).

Subsequently, on the following screen, participants were informed about the specific choice options (i.e., proposals) presented in both the positive and the negative frame. Those who adopted the *recommend for* strategy were asked which frame they would employ to recommend proposal A as convincing as possible. Those who adopted the *recommend against* strategy were asked which frame they would employ to recommend against proposal B as convincing as possible (question 2).

In sum, the experiment comprised a one-way between-subjects design with two conditions (attractive vs. unattractive options). The two dependent variables were the adoption of recommendation mode, and the subsequent selection of frame (positive vs. negative). The order in which persuasive orientation and frames were presented was counterbalanced. No order effects were found.

### 4.2 Results and discussion

The results are presented in Table 3. The data were analyzed by two logistic regressions. In the first main analysis, recommendation mode was regressed on option attractiveness. Overall, most participants adopted the *recommend for* strategy (97 out of 148, or 66%). Option attractiveness seemed to affect recommendation mode asymmetrically. As predicted, a large majority of participants adopted a *recommend for* strategy when the options were attractive (57 out of 76, or 75%). When options were unattractive, however, more people opted for

Table 3: Number of participants in Experiment 3 that adopt a *recommend for* or a *recommend against* orientation (question 1), and select a positive or negative frame (question 2), as a function of option attractiveness.

Recommendation mode:	Option attractiveness					
	Attractive proposals:			Unattractive proposals:		
	Frame		Total	Frame		Total
	Positive frame	Negative frame		Positive frame	Negative frame	
Recommend for	45	12	57	34	6	40
Recommend against	5	14	19	11	21	32
Total	50	26	76	45	27	72

the *recommend against* strategy, and only a small majority adopted a *recommend for* strategy (40 out of 72, or 56%). This difference was statistically reliable ( $\exp(B) = .42$ ,  $SE = .36$ ,  $p = .014$ ).

In the second analysis, frame selection was regressed on recommendation mode, and option attractiveness. Consistent with the previous experiments, most participants employed a positive frame (95 out of 148, or 64%). Due to compatibility, this tendency was most pronounced when a *recommend for* strategy was adopted (79 out of 97, or 81%), and reduced when a *recommend against* strategy was adopted (16 out of 51, or 31%). The difference between conditions was statistically reliable ( $\exp(B) = .10$ ,  $SE = .61$ ,  $p < .001$ ).

As in the first part of Experiment 1, the attractiveness of the proposals did not reliably affect frame selection ( $\exp(B) = .68$ ,  $SE = .64$ ,  $p = .55$ ), nor did attractiveness reliably interact with recommendation mode ( $\exp(B) = .971$ ,  $SE = .84$ ,  $p = .97$ ).

## 5 Experiment 4

The previous experiments focused exclusively on the speakers' perspective. However, a complete pragmatic analysis (e.g., Schwarz, 1996) entails an analysis of both the speaker and listener perspective. The final experiment, therefore, includes both perspectives simultaneously.

The results from Experiments 2 and 3, suggest that speakers in different recommendation modes would probably have different success-rates in persuading listeners to adopt one course of action over the other. The underlying reasoning is that different frames induce in listeners (i.e., decision makers) different choices, but speakers' frame selection, rather than depend on the specific choice option being promoted, is dependent on recommendation mode. In particular, McNeil et al.'s (1982) findings sug-

gest that speakers that promote policy proposal A would be more successful when adopting a *recommend for proposal A (originally surgery) strategy* rather than using a *recommend against proposal B (originally radiation) strategy*. In contrast, speakers that promote proposal B, can be expected to be most successful when trying to recommend against the alternative proposal. To directly assess the congruency between speakers and listeners, speakers' choice of frame and the corresponding listeners' choice of option (i.e., proposal) were assessed within the same experiment.

### 5.1 Method

**Participants:** One hundred forty-seven students from Fontys University of Professional Education in Eindhoven participated in the experiment. The experiment was part of a set of unrelated decision-making tasks that took about 20 minutes to complete. Participants received € 4 for their participation.

**Design and procedure:** Participants were exposed to the scenario used in Experiment 2, except that proposal A was made less attractive by changing the number of business start-ups that survive [fail] in the first five years from 30 down to 27 [70 up to 73]. This minor change was implemented because a pilot experiment had shown that despite previous efforts (see Experiment 2) the two proposals were not judged to be approximately equally attractive.

There were two speaker-conditions. Approximately half the participants in the role of speaker were instructed to *recommend for* proposal A. The remainder was asked to *recommend against* proposal B. All participants were asked which formulation the SER should use in order to best achieve the stated goal. The order in which frames were presented on the screen was counterbalanced. No order effects were found.

Table 4: Participants' responses in Experiment 4. Panel A displays the proportion of participants (in the role of *speaker*) preferring the positive or negative frame to promote the proposal, as a function of recommendation mode. Panel B displays the proportion of participants (in the role of *listener*) choosing proposal A or B, as a function of the frame they were exposed to.

Panel A: Speakers

Recommendation mode	Selected frame		Total pp's
	Positive frame	Negative frame	
Recommend for	25/36 (69%)	11/36 (31%)	36
Recommend against	16/37 (42%)	21/37 (58%)	37
Total pp's	41	32	73

Panel B: Listeners

Frame	Choice		Total pp's
	Proposal A	Proposal B	
Positive frame	25/37 (68%)	12/37 (32%)	37
Negative frame	15/37 (41%)	22/37 (59%)	37
Total pp's	40	34	74

There were also two listener-conditions. In one condition, participants in the role of listener received information in the positive, and in the other condition, they received the information in the negative frame. They were asked which proposal they would choose, if they were to be in charge of deciding as a member of government. The order in which proposals were presented on the screen was counterbalanced. No order effects were found.

## 5.2 Results and discussion

The results are presented in Table 4. The results for speakers and listeners are discussed in turn below.

*Speakers:* Across both (recommend for and against) conditions, most participants selected the positive frame (41 out of 73, or 56%). As expected, this tendency was most pronounced in *recommend for* mode (25 out of 36, or 69%), whereas in *recommend against* mode the proportions of participants selecting the positive frame (16 out of 37, or 42%) was reliably reduced ( $z = 2.26$ ,  $p = .02$ ). This pattern of results replicates and corroborates the findings from Experiments 2 and 3.

*Listeners:* Overall, both proposals were approximately equally attractive (choice proportions were 54% [40 out of 74] vs. 46% [34 out of 74] respectively). As expected, proposal A was judged most attractive when the positive frame was employed (25 out of 37, or 68%, chose proposal A), while its attractiveness in the negative frame

(15 out of 37, or 41%, chose proposal A) was reliably reduced ( $z = 2.33$ ,  $p = .02$ ).

Thus, consistent with the hypothesis, speakers promoting proposal A were more successful when geared towards *recommending for* the proposal than when attempting to *recommend against* the alternative. It appears that recommendation mode can have a detrimental effect on speakers' persuasion attempts. Ideally, speakers should only consider the proposal they are promoting and the impact of alternative frames on listeners, and should not let recommendation mode lead them astray.

## 6 General discussion

The behavior of the decision maker, or listener, who is exposed to different frames, has been the focal point of many studies. In contrast, research into the use of frames by speakers and the manner by which they choose particular frames, has been limited. The present paper examined the choice of frame by speakers whose underlying goal is persuasion, in particular the manner by which it interacts with *Mode of recommendation*.

Replicating previous results, a major finding of the present paper is that, across different sorts of frames, speakers who employ a *recommend for* strategy, tend to use a positive frame (77% across all experiments). The inclination to prefer positive frames, is yet another demonstration of a more general "positivity bias." This

general tendency, although pervasive, is not ubiquitous. The contribution of the present paper pertains to the examination of the effect of recommendation mode on speakers' choice of frame. The preference for either of two logically equivalent frames (positive vs. negative) was shown to be closely related to speakers' use of either one of the two logically equivalent recommendation modes. In particular, speakers' positivity bias was attenuated when a *recommend against* strategy was adopted (45% across all experiments), suggesting that the positivity bias in speakers' choice of frame is asymmetrical. These results are congruent with our other current work (Van Buiten & Keren, 2007) in which we have shown that speakers promoting the use of Breast Self Examination (BSE), have a general preference to employ positive rather than negative frames. This tendency is especially manifested when *recommending for* BSE, and reduced when *recommending against* neglecting BSE.

Option attractiveness was shown to affect framing behavior directly and indirectly. When option attractiveness is sufficiently prominent, framing behavior is affected directly. When options are very attractive, most speakers use positive frames, in essence regardless of recommendation mode. In contrast, when options are particularly unattractive, positive frames are selected less frequently, especially when speakers are in *recommend against* mode. Moreover, option attractiveness has an indirect effect: for both attractive and unattractive options, a *recommend for* strategy is most common, but less so when choice options are unattractive.

Other things being equal, it is proposed that speakers have a default preference for positive over negative frames. Presumably, positive frames and evaluative positive cognitions are generally simpler and easier to comprehend than their negative counterparts. Moreover, social and cultural factors might contribute to the positivity bias. For better or worse, the positive formulation of ideas, facts, and opinions serves as a social lubricant in human communication. Positive frames simply make "better stories" (Dawes, 1999). It seems that, in general, the social acceptability of negative framing is low and, as a result, carries a social cost in communication.

In addition, compatibility effects operate in different ways to enhance or diminish the default positivity effect. First, positive frames are associated more with *recommend for* than with *recommend against* strategies. Second, attractive options, almost by definition, are associated with positive frames, whereas unattractive options are associated with negative frames. Third, the results suggest that speakers, by default, adopt a *recommend for* mode, but due to a compatibility between option attractiveness and recommendation mode, the proportion of speakers that adopt a *recommend for* rather than *recommend against* mode is lower when options are unattrac-

tive.

Notwithstanding the previous interpretation, the default preference for positive framing and its susceptibility to recommendation mode and option attractiveness may also be characterized in terms of the notion of "markedness." Binary pairs (e.g., pleasant-unpleasant) typically have two components, one that is *marked* (e.g., unpleasant) and one that is *unmarked* (e.g., pleasant). Generally, the unmarked component is used to describe the entire dimension, is more common, less specific, and importantly, more positive than the other, marked, component. Positive frames might correspondingly be viewed as the unmarked member in positive-negative frame pairs. Conceivably, the markedness of any binary pair (frames or otherwise) can be influenced by the context implying that the markedness of binary pairs is not fixed across context. For example, "pleasant" might be the unmarked component in many contexts (e.g., describing one's appraisal of leisure activities). In other contexts (e.g., describing one's appraisal of obligatory activities), however, "unpleasant" seems the unmarked component. Correspondingly, recommendation mode and option attractiveness constitute part of the context in speakers' frame construal and thus might help to explain the reduced preference for positive framing in *recommend against* mode and for unattractive options.

The default adoption of *recommend for* mode and positive framing, and their susceptibility to compatibility effects is reminiscent of Gilbert's characterization of belief (Gilbert, 1991). Citing Spinoza, Gilbert argued that one automatically believes an idea as soon as it is comprehended. Disbelieving is subsequent and more effortful than the initial act of belief. Similarly, we propose that *recommend for* and positive framing occur automatically and require little effort and that one only turns to *recommend against* and negative framing after deliberation when the situation calls for it.

In other realms of life, there are examples of similar tendencies to start with a positive default which may be revised only after subsequent reflection. For example, when people engage in strategic behavior that involves multiple interactions over a period of time, they can, and often do, use a cooperative strategy referred to as "Tit for tat." Under this strategy, one starts with a positive orientation and correspondingly an initial act of cooperation, after which, on subsequent encounters one responds in kind to an opponent's cooperative (positive) action, while an uncooperative (negative) one is answered with an uncooperative one. Under certain conditions, this strategy is surprisingly effective compared to other strategies.

The conversational perspective on framing effects, explored in the present paper, illustrates two conceptions of compatibility effect. At the higher level of communication, compatibility refers to the correspondence be-

tween speakers and listeners. At the lower or local level, compatibility refers to the correspondence of responses with stimulus characteristics. At this level, compatibility effects may involve either speakers or listeners. In the present paper the examined compatibility effects pertained to speakers, namely the effects of recommendation mode and option attractiveness on speakers' choice of frame. Local compatibility effects sway compatibility at the higher level of communication through the effects that stimulus characteristics have on the individual responses of speakers and listeners. For example, recommendation mode affects speakers' selection of frame, thereby in turn influencing speakers' persuasive impact on listeners.

In addition to recommendation mode, option attractiveness, and evaluation mode, other factors might influence speakers' choice of frame, and in turn the correspondence between speakers and listeners. For example, speakers might be more inclined to use negative frames when decision makers face decisions that are not easily reversed and are thus more sensitive to (hidden) flaws of a product or service. An example of an important decision that is hard to undo is the purchase of a house. Conceivably, in binary choice, speakers would be more willing to express information in terms of relative disadvantages of the non-preferred alternative (e.g., House NP is located in a worse neighborhood than house P) than in terms of relative advantages of the preferred alternative (e.g., House P is located in a better neighborhood than House NP).

A basic maxim underlying the studies reported here concerns what has been termed by Grice the "cooperative principle." Following this principle, the conversational discourse takes place under the mutual assumption (of both speaker and listener) that the speaker attempts to formulate his message in the most clear and comprehensive manner (given the situation and the listener to whom the message is addressed). Implicit in this maxim is the further assumption that the speaker is honest, even if the speaker's interests are not necessarily identical with those of the listener. In other words, in the terminology of game theory, the communication between speaker and listener resembles a coordination game in which there is a mutual interest to promote cooperation. What happens if the cooperative principle is not satisfied? How does framing change strategically under circumstances in which speaker and listener do not share the same interests or, worse, have opposing interests? Would the role of recommendation mode and the relative frequency positive and negative framing change? Though these questions are beyond the scope of the present paper, they are worthy of future research if one wants to have a more comprehensive understanding of framing and its role in communication.

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